

REMARKS

In response to the above-identified Office Action, Applicant seeks reconsideration of the application. In this response, Claims 19 and 22 have been canceled, Claims 1, 3, 4, 7, 8, 10, 20 and 23 have been amended, and Claims 28 and 29 have been added. Accordingly, Claims 1-13, 18, 20, 21 and 23-29 are pending.

I. 35 U.S.C. § 112

In the Office Action, Claims 4-7, 10-12, 19-20 and 22-23 are rejected under 35 U.S.C. § 112, second paragraph, for various informalities. These matters are believed to be addressed by the claim amendments submitted herewith. It is therefore respectfully submitted that the rejection under 35 U.S.C. 112 be withdrawn.

II. Claim Rejections Under 35 U.S.C. § 102(b)

Claims 1, 2, 7, 18-20 and 24 are rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent Application 5,468,342 issued to Nulty et al. ("Nulty"). Applicant respectfully traverses this rejection.

Applicant first notes that, to anticipate a claim, every element of the claim must be disclosed within a single reference. Thus, if even one feature of the amended Claim 1 is not found in Nulty, Applicant respectfully requests that the rejection of Claim 1 under 35 U.S.C. § 102(b) as being anticipated by Nulty be withdrawn.

Amended Claim 1 requires, among other things, (1) introducing an etch stop layer directly over a substrate, (2) introducing a base layer over the etch stop layer, (3) introducing a dielectric cap layer comprising a plurality of different material layers over the base layer, and (4) introducing a photoimageable material over the dielectric cap layer.

Nulty discloses a semiconductor device structure (as shown in Figure 12) having (1) a nitride layer 1202 formed over a substrate 1200, (2) an oxide layer 1201 formed over the nitride layer 1202, (3) a hard mask layer 1205 formed over the oxide layer 1201, and (4) a photoresist layer 1210 formed over the hard mask layer 1205. However, Nulty fails

to teach or suggest introducing a dielectric cap layer comprising a plurality of different material layers, wherein each respective layer of the plurality of different material layers is selectively etchable with respect to the etch stop layer, as recited in amended Claim 1.

In view of the foregoing, Applicant respectfully submits that Claim 1 is not anticipated by Nulty and requests withdrawal of this rejection. Dependent Claims 2, 7, 18, 20 and 24 are submitted as not being anticipated by Nulty at least for the reasons given in support of their base Claim 1.

III. Claim Rejections Under 35 U.S.C. § 102(e)

Claims 1-13 and 18-27 are rejected under 35 U.S.C. § 102(e) as anticipated by U.S. Patent No. 6,362,091 issued to Andideh et al. ("Andideh"). Applicant respectfully traverses this rejection.

Applicant notes that, to anticipate a claim, every element of the claim must be disclosed within a single reference. Thus, if even one feature of independent Claims 1 and 8 is not found in Andideh, Applicant respectfully requests that the rejection of Claim 1 under 35 U.S.C. § 102(e) as being anticipated by Andideh be withdrawn.

As noted above, amended Claim 1 requires, among other things, (1) introducing an etch stop layer directly over a substrate, (2) introducing a base layer over the etch stop layer, (3) introducing a dielectric cap layer comprising a plurality of different material layers over the base layer, and (4) introducing a photoimageable material over the dielectric cap layer. Similarly, Claim 8 requires, among other things, introducing an etch stop layer directly over a substrate, and introducing a dielectric layer comprising a plurality of alternating material layers over the etch stop layer.

Andideh discloses a semiconductor structure formed by alternating low-k insulating layers 401, 403, 405, 407, 409 and 411 and high strength insulating layers 402, 404, 406, 408 and 410 on substrate 400. However, Andideh fails to teaches or suggest introducing an etch stop layer directly over a substrate, as recited in Claims 1 and 8.

As such, Applicant respectfully submits that Claims 1 and 8 are not anticipated by Andideh and requests withdrawal of this rejection. Dependent Claims 2-7, 9-13 and 18, 20, 21, 23-27 are submitted as not being anticipated by Andideh at least for the reasons given in support of their base Claims 1 and 8.

IV. Claim Rejections under 35 U.S.C. § 103(a)

Claims 3-6, 8-13, 21-23 and 25-27 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Nulty in view of Andideh. Applicant respectfully traverses this rejection.

Applicant respectfully submits that Andideh qualifies as prior art under 35 U.S.C. § 102(e) and the subject matter described in Andideh and the subject matter of all pending claims were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person or entity, Intel Corporation. Pursuant to 35 U.S.C. § 103(c), Andideh is an invalid 103(a) reference and does not preclude patentability of Claims 3-6, 8-13, 21-23 and 25-27 under 35 U.S.C. § 103(a).

Since Andideh is cited as a reference in rejecting the claims, Applicant respectfully requests that the Examiner withdraw the rejection of Claims 3-6, 8-13, 21-23 and 25-27 under 35 U.S.C. § 103(a).

V. New Claims

Applicant submits that New Claims 28 and 29 are supported by the original disclosure. As to New Claims 28 and 29, Applicant submits that none of the cited references discloses or suggests a method comprising: (1) introducing a planarized base layer over a substrate having a plurality of devices; (2) introducing a dielectric cap layer over the base layer, wherein the dielectric cap layer is formed by alternating a first material layer and a second material layer having a higher dielectric constant than the first material layer, wherein the first material layer is more than five times thicker than the second

material layer; and (3) patterning an interconnection to a contact point. At least for this reason, Applicant is of the opinion that New Claims 28 and 29 are allowable.

CONCLUSION


In view of the foregoing, it is believed that all claims now pending patentably define the subject invention over the prior art of record and are in condition for allowance, and such action is earnestly solicited at the earliest possible date.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2666 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17, particularly, extension of time fees.

Respectfully submitted,

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Dated: April 11, 2003



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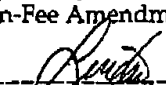

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